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# Properly Managing Parts Washer Waste

## Background

Under the federal Resource Conservation and Recovery Act (RCRA), which Idaho has adopted by reference into state rules and regulations, businesses in Idaho are required to track the amount of wastes generated, determine whether each waste is hazardous, and ensure that all wastes are properly disposed of according to federal, state, and local requirements.

Spent parts washer cleaning solutions are one type of waste covered by this requirement. Owners and/or operators of facilities where spent solvents are generated must demonstrate they have adequately determined if the solvents are hazardous prior to shipping off site.

In general, the regulations require generators to do the following:

- Determine if their waste is a hazardous waste
- Ensure their waste is managed properly in compliance with requirements

This fact sheet provides information and Idaho Department of Environmental Quality (DEQ) recommendations designed to assist you in understanding and satisfying the hazardous waste determination requirements that apply to spent cleaning solutions used in parts washers. Additional requirements may apply, including land disposal restrictions (LDRs) and manifesting requirements. This document is not intended to replace, limit, or substitute for federal and state regulations. Generators and facilities that generate or manage spent parts washer cleaning solutions must ensure they comply with all applicable regulatory requirements. For complete hazardous waste regulations, see the Code of Federal Regulations, Title 40 (40 CFR), Parts 124, 260–268, 270, 273, 278, and 279, which are incorporated by reference into Idaho’s “Rules and Standards for Hazardous Waste” (IDAPA 58.01.05.000, *et seq.*).

## Parts Washer Waste

Parts washers are commonly used in manufacturing or maintenance operations to clean parts or components. Parts washers use cleaning solutions that eventually become spent and must be disposed of or recycled. Spent parts washer cleaning solutions may be a hazardous waste.

Cleaning solutions used in parts washers include solvents and aqueous (water-based) cleaners. Solvents clean by dissolving away dirt. Solvents may be petroleum-based—such as mineral spirits, Stoddard solvent, or petroleum naphtha—or they may be organic, such as tetrachloroethylene, trichloroethane, trichloroethylene, benzene, and xylenes. Aqueous cleaners are pH-neutral or alkaline (high pH) water-based solutions that break down and remove dirt from part surfaces.

40 CFR 262.40(c) requires generators of spent solvents to keep records of any test results, waste analyses, or other determinations made to satisfy the requirement found in 40 CFR 262.11 to determine if the waste is hazardous.

Spent parts washer cleaning solution is a hazardous waste if one or more of the following applies:

- It meets the definition of an F-listed waste. The spent solution contains, before use, 10% or more by volume of one or more of the constituents in the listing description for waste codes F001–F005. These listings can be found in IDAPA 58.01.05.005 (40 CFR Part 261.31). See Table 1 at the end of this document.
- It is ignitable. The solution has a flashpoint of less than 140 °Fahrenheit (F) as specified in 40 CFR 262.21. Solvents that exhibit this characteristic carry the D001 hazardous waste code.

- It is corrosive. The solution has a pH less than or equal to 2 or greater than or equal to 12.5 as specified in 40 CFR 261.22. Solvents that exhibit this characteristic carry the D002 hazardous waste code.
- It is reactive. The solution is explosive, unstable, or reacts violently or generates toxic gases, vapors, or fumes when mixed with water as specified in 40 CFR 261.23. Solvents that exhibit this characteristic carry the D003 hazardous waste code.
- It contains toxic metals or organic chemicals above regulatory limits. The list of the toxicity characteristic chemicals and regulatory limits can be found in IDAPA 58.01.05.005 (40 CFR Part 261.24). See Table 2 at the end of this document.

## Solvent-Based Parts Washers

Many commonly used **solvents** have flashpoints below 140 °F, making them an ignitable hazardous waste (D001). Spent solvents are often hazardous waste because they contain toxic metals such as cadmium, chromium, and lead from parts and equipment cleaned in the parts washer. Spent solvents may also meet the definition of an F-listed waste. To manage spent solvents as nonhazardous waste, the generator must have sufficient process knowledge or site-specific flashpoint, corrosivity, reactivity, and/or Toxicity Characteristic Leaching Procedure (TCLP) results, as applicable, to show they are nonhazardous. What constitutes sufficient process knowledge, in the context of spent parts washer solutions, is addressed more fully below. To determine that your spent solvent is not a hazardous waste under 40 CFR 262.11, you must show the following through testing or sufficient process knowledge:

- The flashpoint is 140 °F or higher.
- The pH of the spent solution is higher than 2 but lower than 12.5 as specified in 40 CFR 261.22.
- It is not reactive as specified in 40 CFR 261.23.
- The solution does not contain toxicity characteristic metals or organic chemicals above TCLP regulatory limits (see Table 2).
- The spent solvent is not F-listed or contaminated with F-listed solvents (see Table 1 and 40 CFR 261.31).

## Aqueous Parts Washers

**Aqueous cleaners** are often advertised as nonhazardous. Although most aqueous cleaners are not ignitable and nontoxic when new, they can become a hazardous waste after use due to toxic metals from the parts and equipment cleaned in the parts washer. Spent aqueous cleaners can also be hazardous for corrosivity if the pH is less than 2 or greater than 12.5. Spent aqueous cleaning solutions may also be hazardous if they are contaminated with listed hazardous solvents or other toxic organic compounds, such as aerosol sprays applied to parts before washing. To manage aqueous cleaners as nonhazardous waste, the generator must have sufficient process knowledge (see below) or site-specific flashpoint, corrosivity, reactivity, and/or TCLP results, as applicable, to show they are nonhazardous. If no solvent-based cleaners, such as brake or carburetor cleaners, have been used on parts or near the aqueous parts washer, TCLP analysis for the eight RCRA metals should suffice. To determine that your spent aqueous cleaning solution is not a hazardous waste, you must show the following through testing or sufficient process knowledge:

- The flashpoint is 140 °F or higher.
- The pH of the spent solution is higher than 2 but lower than 12.5 as specified in 40 CFR 261.22.
- It is not reactive as specified in 40 CFR 261.23.
- The solution does not contain toxicity characteristic metals or organic chemicals above TCLP regulatory limits (see Table 2).
- The solution is not contaminated with F-listed solvents (see Table 1 and 40 CFR 261.31).

Waste management service companies may offer to perform or assist you, the generator, with your hazardous waste determination. However, the waste generator has the ultimate responsibility for performing the hazardous waste determination and managing their hazardous waste. You must maintain documentation of your hazardous waste determination, whether you have relied on analytical testing or can demonstrate sufficient process knowledge.<sup>1</sup>

## Record Keeping

Keep the following records for a minimum of 3 years:

- Test results or other documentation showing a waste is hazardous or nonhazardous, whether you have relied on analytical testing or can demonstrate sufficient process knowledge. Keep these records for 3 years from the time the waste was last generated.<sup>1</sup>
- Hazardous waste manifests (and LDR forms, if needed) for off-site shipments of hazardous waste.

While the hazardous waste regulations do not require you to keep copies of invoices, receipts, or bills of lading for off-site shipments of nonhazardous waste, DEQ recommends maintaining this documentation. Showing this documentation to an inspector can help demonstrate you are meeting the requirements of other regulatory programs such as the solid waste regulations.

## Waste Characterization, Process Knowledge, and Parts Washers

To properly characterize a waste as hazardous or nonhazardous, a generator must perform analytical testing of a sample from that waste, or when appropriate, a generator may rely on knowledge of its process to eliminate repetitive sampling and analysis.

Whether spent parts washer solution is hazardous will depend on the chemicals and materials with which the parts being washed have come into contact and the material makeup of the parts themselves. When washing dirty parts, the cleaning solution may become contaminated with materials such as solvents, oils, greases, and metals. Due to the variables involved with parts washing, generators are encouraged to perform analytical testing on every batch of waste that is generated to help ensure that hazardous wastes are handled appropriately and avoid expenses related to enforcement actions. If spent parts washer solution testing is consistent, you can rely on clearly documented process knowledge to reduce sampling frequency. However, your hauler or disposal company may require testing to properly characterize, ship, and dispose of the waste since they may also be held liable if the hazardous waste is mishandled.

Relying on analyses of a *similar* waste from a different site or batch is not recommended because it does not take into account site-specific variables that are inherent to many parts washing operations. Relying on analysis of a similar waste increases the potential for mishandling hazardous waste and can lead to a costly enforcement action. This type of process knowledge characterization must include a detailed description of why the generator believes it may rely on the analytical results from a similar waste sample. It is recommended that a generator consult with DEQ in advance to determine whether characterizing in this way is appropriate.

To properly document process knowledge, you must re-evaluate your spent cleaning solutions periodically to verify that conditions affecting the composition of your waste have not changed. If you intend to show through initial testing that the solution from your parts washer is nonhazardous and you want the test results

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<sup>1</sup> Very small quantity generators (VSQGs) are not subject to the requirement found in IDAPA 58.01.05.006 (40 CFR 262.40(c)) to maintain hazardous waste characterization data. However, DEQ strongly recommends that VSQGs keep such documentation in their files to be able to demonstrate that an adequate hazardous waste determination has been performed. Maintaining this documentation will assist you in showing an inspector that you have performed the required hazardous waste determinations and properly determined your generator status.

to apply to subsequent batches of the solution, you must document that your operation has remained the same and provide such documentation upon request. For example, your records should indicate the following:

- The same kinds of parts are being cleaned and the contaminants are the same.
- The same cleaner and cleaning process is being used.
- The length of time the solution was in service (e.g., 3 months) or the number of parts washed remains the same.

Determining the sufficiency of process knowledge is case specific. If you have any questions about this type of determination, consult with DEQ in advance to determine whether characterizing in this way is appropriate. Failure to adequately document process knowledge constitutes a failure to properly characterize the waste and may subject a generator to enforcement action.

Process knowledge may also be used to specify known characteristics in the waste, thereby limiting the analytical work necessary. Generators are encouraged to use process knowledge in this way.

### **Additional Information**

For more information on how to count spent solvents to determine your generator status, see [\*Counting Spent Solvents to Determine Hazardous Waste Generator Status\*](#).

For information on how to manage solvent-contaminated rags, see [\*Management of Solvent-Contaminated Wipes\*](#).

For more information on hazardous waste, visit DEQ's Hazardous Waste Management webpage at [www.deq.idaho.gov/hazardous-waste](http://www.deq.idaho.gov/hazardous-waste) or contact DEQ.

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**Table 1. Solvents on the F List.**

Category	Solvent
F001	Carbon tetrachloride, chlorinated fluorocarbons, methylene chloride, tetrachloroethylene, 1,1,1-trichloroethane, and trichloroethylene.
F002	Chlorobenzene, methylene chloride, orthodichlorobenzene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, and 1,1,2-trifluoroethane.
F003	Acetone, cyclohexanone, ethyl acetate, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butyl alcohol and xylene.
F004	Cresols, cresylic acid and nitrobenzene.
F005	Benzene, carbon disulfide, 2-ethoxyethanol, isobutanol, methyl ethyl ketone, 2-nitropropane, pyridine, toluene. Mixtures and blends of the above solvents and distillation bottoms are also listed. For detailed information, see 40 CFR 261.31.

**Table 2. Toxicity contaminants and maximum.**

Hazardous Waste Number	Contaminant	Concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon tetrachloride	0.5
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol	200.0 <sup>a</sup>
D024	m-Cresol	200.0 <sup>a</sup>
D025	p-Cresol	200.0 <sup>a</sup>
D026	Cresol	200.0 <sup>a</sup>
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D009	Mercury	0.2
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl chloride	0.2

<sup>a</sup> If 0-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.